

Dengue Fact Sheet

U.S. Embassy, Vietnam

Prevention of Dengue Fever

Dengue Fever occurs throughout Vietnam, with the greatest number of cases in the southern part of the country. Dengue Fever is characterized by acute onset of high fever, intense headache, and severe aches and pains in the muscles and joints lasting several days to a week or more. Fever may be accompanied by a rash. Fatigue may linger for weeks. The most severe clinical form is Dengue Hemorrhagic Fever (DHF). Although Dengue Fever occurs year-round in Vietnam, it peaks in the hot rainy months of July and August. There is no vaccine or medicine against Dengue Fever. The only way to prevent it is to avoid being bitten by *Aedes* mosquitoes. These mosquitoes are peri-domestic, living in and around human dwellings. They prefer to feed on humans during the day, especially in the cooler mornings and evenings. To avoid contracting dengue fever, you need to protect yourself from the bite of this mosquito.

General Precautions

Avoid environments that are known to harbor the *Aedes* mosquitoes that carry the viruses causing Dengue Fever. Most importantly, these are places where people store household water in containers without secure lids, a practice that is more likely to be found in rural areas or slums, and where there may be other small collections of fresh still water which are preferred by *Aedes* mosquitoes as breeding sites, such as plant containers and discarded receptacles that catch and hold rain water. Some *Aedes* mosquitoes prefer to breed, rest, and feed on humans in gardens, where it is cool and shady and where they find small collections of fresh water to lay their eggs, such as at the bases of large leaves. Dengue Fever is more prevalent during the rainy season, so adjusting your itinerary can reduce your risk. Mosquitoes that carry the dengue viruses like to bite during the daytime in shady areas, and on cloudy, overcast days. Avoiding areas with mosquitoes and taking protective steps against mosquito bites will reduce your risk of exposure.

Repellents applied to clothing and shoes, tents, mosquito netting, and other gear will enhance protection.

Air-conditioning and screens: When possible, stay in well screened or air-conditioned areas. Check your location for places mosquitoes can get in, such as between bricks that is not sealed correctly, a torn screen, or a door that does not close properly.

Water: Mosquitoes that carry dengue breed in containers of still, fresh water. Therefore, if you have any standing water in or around your house or apartment it is best to remove this water, or change it daily. Examples are jars without lids, small ponds, vases, plates for potted plants, pet water dishes, and any discarded containers on your property or adjacent properties, such as old tires, tin cans, glass or ceramic jars. If you are being bitten by mosquitoes in your garden, you may wish to consider trimming or removing large, leafy plants, and opening up the garden to more sunshine and less shade.

Check your neighbor's yards, too. They may be unaware that they have *Aedes* breeding places.

Clothing: In areas with mosquitoes, wear clothes that adequately cover your arms, hands, legs, ankles, and feet. Tuck in your shirt, wear long pants tucked into your socks, and wear only closed toed shoes, not sandals. You can wear clothes sprayed with or soaked in permethrin. Clothes are now available at outdoors stores that have permethrin in the material. They last several washings. Read the directions on the material.

Bed Nets: When living spaces that are not adequately screened or air conditioned, bed nets are essential to provide protection against mosquitoes for you and your children. Bed nets and child carriage nets should be used when sleeping during the daylight hours as well as at night, especially to protect against dengue. Bed nets should be tucked under mattresses and can be sprayed with or soaked in a repellent such as permethrin. The permethrin will be effective for several months if the bed net is not washed subsequently.

Aerosol insecticides can help clear rooms of mosquitoes. Avoid inhaling the aerosol spray.

More on Repellents

Applied to clothes

Permethrin-containing repellents (Permanone) are recommended for use on clothing, shoes, bed nets and camping gear and are registered with the United States Environmental Protection Agency (EPA). Permethrin both repels and kills mosquitoes. Treated clothing repels and kills mosquitoes and other arthropods and retains potency after repeated laundering. For best protection, the insecticide should be reapplied after every five washings.

Repellents applied to the skin

The EPA has approved several repellents for efficacy and human safety if applied according to the instructions on the label. All of the registered EPA active ingredients have some repellent activity, but most authorities recommend repellents containing DEET as the most reliable and long-lasting when applied to the skin. There are different percentages but there is little added benefit of concentrations greater than 30 %. DEET can be used with sunscreen.

DEET is toxic when ingested and may cause skin irritation in sensitive persons. High concentrations applied to that skin can cause blistering. However, DEET is widely used and a great deal of testing has been done; over the long history of DEET use, very few confirmed incidents of toxic reaction to DEET occurred when the product was used properly.

Take the following precautions if using DEET:

- Use enough to cover exposed skin. Do not apply repellent to skin that is under clothing. Heavy application is not necessary to achieve protection.
- Do not apply repellent to cuts, wounds, or irritated skin.
- Do not apply aerosol or pump products directly to the face. Spray your hands and then rub them carefully over the face, avoiding eyes and mouth.
- When using repellent on a child, apply just to your own hands and then rub them on the child. Avoid the child's eyes and mouth and apply sparingly around the ears.
- Do not apply repellent to children's hands. (Children tend to put their hands in their mouths.)
- Do not allow children under age 10 years old to apply insect repellent to themselves; have an adult do it for them.

In conclusion: Dengue, as well as Malaria and Japanese Encephalitis, are spread by mosquitoes in Vietnam and elsewhere in South East Asia. If you protect yourself from getting bitten by mosquitoes you will not acquire these diseases. It is difficult to follow all of the above directions, but they do work. The insect repellent that is sold in Vietnam is called Sofell. It has 15 % concentration of DEET, which means it has to be reapplied every 4 to 6 hours. All repellents have to be reapplied if they are washed or sweated off. Just a few precautions will keep you safe and well.

Additional information can be found at:

<http://www.travmed.com/>,

<http://www.travelhealthhelp.com>,

<http://www.epa.gov/pesticides/factsheets/insectrp.htm>

http://www.cdc.gov/ncidod/dvbid/westnile/qa/insect_repellent.htm

<http://www.cdc.gov/ncidod/dvbid/dengue/index.htm>

<http://www.cdc.gov/ncidod/dvbid/dengue/resources/DengueFactSheet.pdf>

<http://www.bt.cdc.gov/disasters/tsunamis/pdf/dengueqa.pdf>

<http://www.cdc.gov/ncidod/dvbid/dengue/dengue-qa.htm>

<http://wwwn.cdc.gov/travel/yellowBookCh4-DengueFever.aspx>

<http://www.travax.com>